

John L. Bennett

Research Division, San Jose, California

Mr. Bennett has been a Research Staff Member at the IBM Research Laboratory, San Jose, CA, since 1961. He received a B.S. in engineering science from Stanford and an M.S. in electrical engineering from MIT. He has done research on information retrieval systems, on decision support systems, and on usability of terminal-based interactive systems. This work reflects a long-standing interest in making computer systems (as mediated by software) easy to use. He has been manager of Geographic Data Systems and of Interactive Problem-Solving Systems at the Research Laboratory. Recently he worked with an IBM division on integration of measurable, testable usability objectives into the development cycle for software products. He is editor of the forthcoming Addison-Wesley book *Building Decision Support Systems*.

Olivier P. Bertrand

Research Division, San Jose, California

Mr. Bertrand graduated from Ecole Centrale de Paris in 1958 and joined IBM France as a scientific programmer that same year. He then held various programming and teaching positions in IBM France, working in the areas of computer-assisted learning, application development, interactive systems, and quasi-natural language translation. In 1977, he joined the IBM France Scientific Center, where he designed and built a system to support quasi-natural language data base query. Mr. Bertrand joined the JANUS project in 1981 during a sabbatical from the IBM France Scientific Center. He is a member of the Association Francaise de Cybernétique Economique et Technique (AFCET).

Authors

Christine V. Bullen

*Center for Information Systems Research
Massachusetts Institute of Technology, Cambridge, Massachusetts*

Ms. Bullen is Assistant Director, CISR, and Research Associate at the Sloan School of Management. She has conducted research using the critical success factor methodology to identify the information needs of top management, has designed and implemented distributed processing systems, and has studied the relationship of end-user work to computer support. She is currently involved in an office systems study looking at future office technologies, specifically teleconferencing, managerial workstations, and secretarial functional support. She received her Master's Degree from the Sloan School in 1976. Her industrial work experience includes positions on the corporate planning staff of Inforex, Inc., the staff of Arthur D. Little, Inc., and as Executive Assistant to the President of the Brand Rating Research Corporation.

Roy J. Byrd

Research Division, Yorktown Heights, New York

Mr. Byrd joined IBM in 1968. Most of his career has involved designing and building software systems which support high-level end-user interfaces. These have included a natural language query system, a relational data base query language (Query-by-Example), an office automation system that uses artificial intelligence techniques to raise the level of the user interface, and EPISTLE. Mr. Byrd received his B.A. degree in music theory and composition from Yale University in 1967 and is a Ph.D. candidate in linguistics at New York University.

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Eric D. Carlson

Research Division, San Jose, California

Since joining IBM in 1972, Dr. Carlson has been doing research on improved hardware and software support for interactive applications. In 1976 he received an Outstanding Contribution Award for his work on the Geo-Data Analysis and Display System (GADS), one of the first decision support systems for managers that made extensive use of graphics. He is currently manager of Advanced Applications Systems in the Computer Science Department. Dr. Carlson received his Ph.D. degree in computer science from the University of North Carolina.

Donald D. Chamberlin

Research Division, San Jose, California

Dr. Chamberlin is manager of the Document Systems project at IBM's San Jose Research Laboratory. He joined IBM as a Research Staff Member at IBM's Thomas J. Watson Research Center in 1971. His research activities at IBM have included work on operating systems, relational data base systems, and document processing. He received his B.S. from Harvey Mudd College in 1966 and his Ph.D. in electrical engineering from Stanford University in 1971.

Martin S. Chodorow

Hunter College, City University of New York, New York, New York

Dr. Chodorow is Assistant Professor of Psychology at Hunter College of the City University of New York. From 1975 to 1977, he worked for IBM on a special research assignment, studying natural language instruction sets and commands. Dr. Chodorow's interests are in psycholinguistics in general, and language comprehension in particular. He received a Ph.D. in psychology in 1976 from M.I.T.

David M. Choy

Communication Products Division, San Jose, California

Dr. Choy obtained his Ph.D. in electrical engineering from the University of Illinois at Urbana-Champaign in 1974 and joined the Computer Science Department at IBM's San Jose Research Laboratory, where he did research in system performance evaluation, computation complexity, coding theory, and data base systems. From 1976 to 1978 he was engaged in the development of System R. He joined the Communication Products Division (CPD) Advanced Technology Department at the San Jose Research Laboratory in 1978. Since then he has done research and ad tech work in image processing, speech recognition, and data base management systems. He designed an office document file and, later, a shared information subsystem for integrated office systems. Dr. Choy is currently the project leader of the Office Information Systems group in the CPD Advanced Technology Department. His interests include information theory, algorithms, data base management systems, and office automation.

Michael J. Goodfellow

Research Division, San Jose, California

Mr. Goodfellow joined IBM in 1980 as an Associate Programmer, on the staff of IBM Fellow W. Beausoleil, where he did graphics application programming, mostly for the 3277 Graphics Attachment RPQ. In 1982, he transferred to the Research Division at San Jose to work on the JANUS text-processing system. Mr. Goodfellow received a B.A. degree in mathematics from Marist College in 1978.

George E. Heidorn

Research Division, Yorktown Heights, New York

Dr. Heidorn has been a Research Staff Member in the Computer Sciences Department at the IBM Thomas J. Watson Research Center since 1973. His work for the past several years has been in the area of natural language processing, first for automatic programming and more recently for office systems. He received a B.M.E. from General Motors Institute in 1962 and a Ph.D. in operations research from Yale University in 1972.

Karen Jensen

Research Division, Yorktown Heights, New York

Dr. Jensen joined IBM in 1980 and is a Research Staff Member in the Computer Sciences Department at the IBM Thomas J. Watson Research Center. Her current work in natural language processing encompasses both the generation and analysis of texts. She received a Ph.D. in linguistics from the University of Hawaii in 1977 and was an assistant professor at Hofstra University before coming to IBM.

James C. King

Research Division, San Jose, California

Dr. King is a Research Staff Member in the Computer Science Department at the San Jose Research Laboratory. He joined IBM in 1969 after completing his Ph.D. in computer science at Carnegie-Mellon University. He worked at the IBM Thomas J. Watson Research Center until 1977. After spending a sabbatical year at the Artificial Intelligence Laboratory at Stanford University, he took his present position in San Jose, where he is involved in document processing and printing. Dr. King has published many papers in the area of proving computer programs correct and in program testing.

Vincent Y. Lum

Research Division, San Jose, California

Dr. Lum joined IBM in 1962 and has been with the Research Division since 1966. Currently he is the manager of the Procedure Automation Project which is developing an application system for automating business and office procedures. Previously he was the manager of a project that developed a data restructuring package that is an IBM product. Since Dr. Lum was one of the earliest researchers in the areas of data organization, data bases, and their application, his early work has frequently been used for teaching and as a basis for further research. He is the author or coauthor of many papers in these areas and has served in many positions as an active member of professional societies. Dr. Lum received his undergraduate training from the University of Toronto and his Ph.D. from the University of Illinois.

Lance A. Miller

Research Division, Yorktown Heights, New York

Dr. Miller joined IBM in 1968 and became manager of the Behavioral Sciences and Linguistics Group in the Computer Sciences Department at the IBM Thomas J. Watson Research Center in 1975. Following a long period of study of the behavioral issues in interactive computing, especially programming, he is now focusing on the development of automatic natural language processing applications. Dr. Miller received the Ph.D. in cognitive psychology from the University of Wisconsin at Madison in 1968.

Nan C. Shu

National Accounts Division, Los Angeles, California

Ms. Shu joined the IBM Thomas J. Watson Research Center in Yorktown Heights, NY, in 1964 as a member of an experimental programming group responsible for the development of the first IBM virtual memory machine. In 1972 she joined the San Jose Research Laboratory, where she has been active in the areas of data translation, data base design, and the development of compiling techniques. She was one of the key contributors to the data conversion project which developed the IBM product, Data Base Restructuring System. From 1980 to early 1982, she has worked with her coauthors of the paper in this issue to define the current project in office automation described in the paper. Ms. Shu is currently with the IBM Los Angeles Scientific Center. She is the author or coauthor of a number of papers and the recipient of several IBM awards. She holds an M.S. degree in chemistry and mathematics from the University of Wisconsin.

Donald R. Slutz

ESVEL, Inc., Campbell, California

Dr. Slutz was a member of the Computer Science Department at the IBM Research Laboratory in San Jose from 1968 to 1981, where he worked in the areas of performance evaluation, relational data base management systems, and interactive document formatting. He is currently pursuing an interest in data base machines. In 1964 he received a B.S. in electrical engineering from the University of Wisconsin and in 1968, a Ph.D. in electrical engineering from the Massachusetts Institute of Technology. He is a member of the Association for Computing Machinery and the Institute of Electrical and Electronics Engineers.

Stephen J. P. Todd

IBM United Kingdom Scientific Centre, Winchester, England

Mr. Todd joined the IBM Scientific Centre in 1971. He has worked there except for a two-year assignment at the Research Division in San Jose, CA. During this assignment he researched text processing and coding theory. Most of his other work with IBM has been on relational data base systems, with some on the automated office, image processing, and graphics. He took a B.A. in mathematics at Oxford in 1968, and an M.A. in 1969.

Bradford W. Wade

Research Division, San Jose, California

Dr. Wade is a Research Staff Member in the Computer Science Department at the Research Laboratory in San Jose. In 1974 he joined IBM, where he contributed to the design and implementation of System R, a relational data base management system. Since 1980 he has been associated with the Document Systems group at the Laboratory, working in the areas of document formatting, image processing, and interactive graphics. Dr. Wade received a B.A. degree in mathematics from Pomona College in 1969, and the M.S. and Ph.D. degrees in computer science from Purdue University in 1970 and 1976. He is a member of the Association for Computing Machinery and Phi Beta Kappa.

Moshé M. Zloof

Research Division, Yorktown Heights, New York

Dr. Zloof is a Research Staff Member in the Computer Sciences Department of the IBM Thomas J. Watson Research Center. He is currently senior manager of the Office Automation project. He attended the Technion Institute of Haifa, receiving the B.S.C.

degree in mechanical engineering in 1959. Prior to working on the Ph.D. degree, Dr. Zloof was owner of a construction company for public works in Tel Aviv, Israel. After receiving his Ph.D. degree in bioengineering from the University of California at Berkeley in 1972, he joined IBM to work in biomedical areas. In late 1973, he joined a project on small business machines. Since then, he has conceived and developed the Query-by-Example programming language, which is now an IBM product. He is currently working on a new high-level programming language for office and business automation. The language, called Office-by-Example (OBE), is being implemented at the Research Center. Dr. Zloof is an adjunct professor at the Courant Institute of New York University.